

UK Visions for C4ISTAR and Advanced Technology

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"...separate ground, sea and air warfare is gone forever. If ever again we should be involved in war, we will fight it in all elements, with all services, as one single concerted effort. Strategic and tactical planning must be completely unified."

President Eisenhower, 1958.



Evolution in the Conduct of Operations

- **Expeditionary Strategy**
 - More Responsive with wider remit for in-service ISTAR
 - Move information faster
 - Implications for Analysis
- **Less Laminated Approach**
 - Blurring of Strategic/Operational/Tactical levels
 - Change in information flows – tactical impact operational importance/strategic significance
 - More seamless way of moving information around
- **Less Stove-piped**
 - Joined up Government at the top
 - PSO – more cross connectivity to OGD, NGO and other Governments
 - More allies (NATO, EU, PfP, other UN)



CBM Mission

‘To improve the way we command and manage the Joint and multinational battlespace, both now and in the future, exploiting all means, to maximise the capability of the UK Armed Forces to fulfil their tasks as required by HMG within the resources available.’



CBM Vision

***“Enhanced military capabilities through
Decision Superiority in the Joint
multinational battlespace,
in order to fight and win.”***

Endorsed by COS Committee Mar 01



CBM Development Programme

- How do we do it?
 - High Level Goals and change objectives
- CBM High Level Goal 1 – ‘Seamless Operational Processes with the right enablers across a Joint and multinational force.’
 - Change Objective 1.2 - Information Fusion and Information Requirements Management
 - Change Objective 1.3 - Collection co-ordination and C2 of ISR assets



UK Vision for C4ISTAR (1)

- Access to output of a broad mix of sensors and platforms.
- ICT infrastructure to coord employment of ISR assets and exploit Int and Info in near real time.
- Day/night coverage, any Op environment, all weathers and across EMS.
- Deployed HQs with same level of service as home base, with ICT transparent to end user.



UK Vision for C4ISTAR (2)

- Coherence between UK ISR capabilities (and allies).
- Common architecture which correlates and fuses the output ISR sensors with other assets in near real time to achieve a common database of the battlespace available to all UK platforms/formations that need it.
- Interoperability with allies allowing collaborative ISR management.
- Faster procurement focused on system of systems rather than individual platforms.





Emerging ISTAR Principles

- Centralise at highest practical level of command; devolve execution to those best able to carry it out.
- National vs Strategic vs Theatre – Timeliness issues now almost as important for military strategic level.
- Coherent, flexible structure and common processes at each level of command.
- Organic assets controlled at each level of command but spare capacity available for tasking by others.

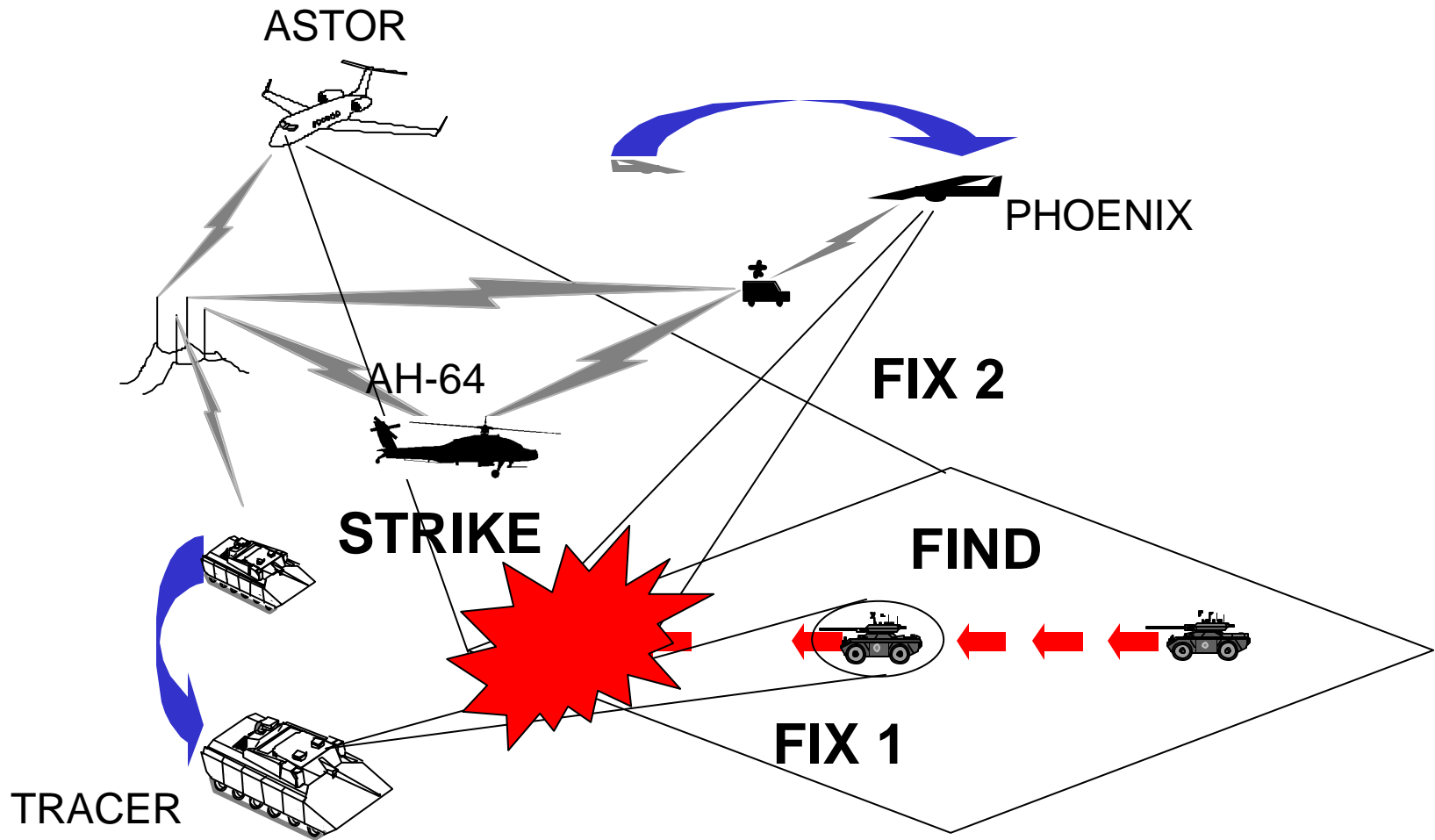


Emerging ISTAR Principles

- Direct feeds between Sensor/Decision Maker/Shooter needed on occasions.
- Co-ordinate overall ISTAR effort to enable desired effect (matched to range & tactics).
- Modular approach to information fusion and processing embedded at multiple levels of command.
- Disseminate processed information/intelligence vice raw data but give commanders access to raw data if necessary.
- Avoid a system that needs constant co-ordination



Cross Cueing Concept for Coord & Synchronisation



Capability Aspirations (1)

- Need coherent mix of organic/non-organic systems.
- More Network-centric approach to ISR sensors and the processing and management of the information
- Broad and detailed coverage of the battlespace and all potential target types
- Synchronised collection available 24/7 providing support to each level of command
- Facilitate the sensor/decision maker/shooter process



Capability Aspirations (2)

- Have sufficient redundancy and resilience
- Provide timely, accurate, digestible and relevant info where/when needed to meet information needs.
- Interoperate with each other and with external non-ISTAR systems
- Easily and rapidly deployed, easy to use and maintain, minimum footprint.
- Have flexibility and utility in PSO and PE Ops.



Areas For Further Work

- Coordinating planning and tasking of ISR assets
- Centralised or decentralised information fusion?
- In theatre vs reach-back?
- How much cross-cueing of non-organic sensors to organic systems?
- Assuring commander's access to info when network fails
- Identifying the new skills and structures required in information management
- Optimal balance between human in the loop and automation in information fusion?



The Need for Manned Recce!



